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(12) **United States Patent**
Nishiumi et al.

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(54) **USER CONTROLLED GRAPHICS OBJECT
MOVEMENT BASED ON AMOUNT OF
JOYSTICK ANGULAR ROTATION AND
POINT OF VIEW ANGLE**

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(*) Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

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Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(57) ABSTRACT

Three-dimensional image display game system and method for use with a display for displaying an object in a three-dimensional space, including an operation controlling device including an operating member having a base end rotatably supported and a free end operable by an operator. The operation controlling device includes an inclination amount data output detector which detects an inclination amount of the operating member to output inclination amount data. The system further includes direction determining circuitry operable to determine a direction that corresponds to an inclination direction of the operating member based on the inclination amount data, and moving object direction determining circuitry which determines a moving direction of the object in three-dimensional space based upon the direction determined by the direction determining circuitry and a point of view angle at which the object is being viewed by the operator in three-dimensional space. A direction in which the operating member must be moved to cause forward movement of the object is offset from a forward direction of the operation controlling device by an angle corresponding to the point of view angle.

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(51) Int. Cl.⁷ **G06T 15/20**

(52) U.S. Cl. **345/427; 345/419; 345/474**

(58) Field of Search **345/419, 145,
345/160, 161, 953, 427, 474**

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34 Claims, 14 Drawing Sheets

